ROLLER SKATES WITH ADJUSTABLE LONGITUDINAL DIMENSION

FIELD OF THE INVENTION

The present invention relates to roller skates with an adjustable longitudinal dimension and particularly to a mechanism that provides a coupling section for latching and anchoring and a sliding trough for moving to adjust the dimension.

BACKGROUND OF THE INVENTION

In-line roller skates basically can be grouped ~~in~~ into five types that have different designs and characteristics to achieve different functions as follows:

1. Leisure skates: they are the most common type, and usually consist of an inner pad and a shoe cap. They mainly aim at providing comfort and safety, and are designed for recreational use for the general public. The wheels and bearings are replaceable according to user's preferences and requirements. 2. Stunt skates: whether with a U-shaped deck or jumping board, they have special design requirements. As ~~there~~ they are used for many jumping actions ~~occurred~~, they require a balanced base deck and a sturdy and well-covered inner pad to avoid exercise injury. They also are of a smaller size and have a flat and wider shape to make landing on the ground more stable. They usually are coupled with straps and lateral sliding flaps and a base deck guarding flap. 3. Hockey skates: they usually adopt an integrated ~~forming~~ form without inner pad so that they enable the foot to fit the shoe more closely, and ~~moving forwards~~ so that forward motion and goal shooting may be exercised quickly. Their material is mainly leather. 4.

Speeding skates: generally use high class wheels and more precise bearings, and usually have five wheels. The base deck mostly is made of aluminum alloy. The wheels have diameters ranging from 76 mm to 80 mm, and usually are formed in a sharp profile to reduce friction force with the ground surface. 5. Figure skates: usually have a base deck coupling with three or four wheels, and have a stop at the front end of the base deck to facilitate performing pivot and leap actions.

The adjustable roller skates now available on the market as shown in FIGS. 1 and 2 mainly have a straight slot or anchor holes on the truck or the lateral side. There is a sliding mechanism located on the bottom of the roller skate. Screws are coupled on the straight slot or anchor holes for anchoring the position. When the screws are unfastened, the shoe cap may be slid freely on the truck to adjust the dimension. Once the dimension is decided, the screws are fastened to the straight slot or anchor holes. Hence the dimension of the shoe cap may be adjusted for more than one ~~people~~ person to wear. As the anchor holes have limited intervals, the dimension adjusting range of the roller skates also is limited. The straight slot does not have such a problem, and thus can adjust the dimension more freely. However, the screws are difficult to fasten and easy to get lost. All of this often causes inconvenience when in use.

SUMMARY OF THE INVENTION

The primary object of the invention is to resolve the aforesaid disadvantages. The invention consists of:

a two-piece shoe cap which includes a toe cap and a heel cap. The shoe cap has an anchor section on the bottom for anchoring use;

a truck having a bottom to couple with wheels thereunder to form the roller skate and brace the two-piece shoe cap and enable the two-piece shoe cap to slide thereon, and a housing trough formed on a lateral side at a desired location; and

an adjusting bolt housed in the housing trough to mate a track formed on the truck and being movable on the truck.

The foregoing, as well as additional objects, features and advantages of the invention will be more readily apparent from the following detailed description, which proceeds with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a conventional roller skate ~~adopted a conventional technique~~.

FIG. 2 is a side view of a conventional roller skate ~~adopted a conventional technique~~.

FIG. 3 is a perspective view of the embodiment of the present invention.

FIG. 4 is an exploded view of the embodiment of the present invention.

FIG. 5A is a schematic view of the embodiment of the present invention in an operating condition.

FIG. 5B is a schematic view of the embodiment of the present invention in another operating condition.

FIG. 5C is a schematic view of the embodiment of the present invention in yet another operating condition.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

~~Please referring~~ Referring to FIG. 3, the roller skate according to the invention basically includes a truck 10 which has a plurality of wheels 11 on the bottom to provide sliding function for the roller skate, a two-piece shoe cap 14 which includes a toe cap 140 and a heel cap 141 to accommodate the foot of a user with at least one of them being slidable on the top section of the truck 10, and (referring to FIG. 4) at least one adjusting bolt 120 located on one side of the truck 10. In normal conditions, the adjusting bolt 120 is fastened to one of the movable toe cap 140 and heel cap 141 for anchoring on the truck 10. The adjusting bolt 120 may also be moved to a release position to unfasten the movable toe cap 140 and heel cap 141 that has been anchored. Thus the relative position of the toe cap 140 and the heel cap 141 may be adjusted to suit different sizes of ~~foot~~feet.

Referring to FIG. 4, the truck 10 aims at bracing the two-piece shoe cap 14 that have respectively a sliding track 17 and a sliding section 16 mating with each other to enable the two-piece shoe cap 14 to slide freely on the truck 10. The toe cap 140 and heel cap 141 have respectively an anchor section 123 on the bottom. The adjusting bolt 120 is housed in a housing trough 13 on the truck 10 to engage with a screw 15 located on

a corresponding location. The adjusting bolt 120 and the anchor section 123 are used to adjust the position of the two-piece shoe cap 14 and alter its dimension. The toe cap 140 and heel cap 141 have a first sliding slot 20, a second sliding slot 20' and a third sliding slot 23 on a lower side to couple with a first fastening screw 21 and a second fastening screw 21'. The first fastening screw 21 passes through the first sliding slot 20 to engage with a first anchor hole 22 on the truck 10. The second sliding slot 20' is stacked over and aligned with the third sliding slot 23, and is coupled with the second fastening screw 21' to engage with the second anchor hole 22' located on the truck 10. The truck 10 has two tracks 18 and 18' on the upper side to enable the anchor section 123 to slide thereon.

The adjusting bolt 120 and the anchor section 123 have respectively a first coupling section 124 and a second coupling section 124' each being an elongated strip with jutting ~~object~~ objects of equally paced pitches. The equal pitches enable the two to couple with each other and move transversely. The second coupling section 124' of the adjusting bolt 120 abuts a sliding trough 125 which is a flute with a smooth surface so that the first coupling section 124 of the anchor section 123 may be slid thereon for adjusting the dimension of the two-piece shoe cap 14.

The adjusting bolt 120 is located in the housing trough 13 on one side of the truck 10. It has a depressing section 19 extending from one side the truck 10 and a round tube 121 extending from another end. The round tube 121 has internal screw threads to engage with the screw 15 and also couples with an elastic element 122 from outside. The

adjusting bolt 120 is located ~~on~~ in a first position when the elastic element 122 is at the natural condition as shown in FIG. 5A. At this position the first coupling section 124 and the second coupling section 124' of the anchor section 123 and the adjusting bolt 120 are engaged with each other for anchoring. ~~Push~~ When the depressing section 19 is pushed, the elastic element 122 is compressed, and the adjusting bolt 120 is moved to a second position as shown in FIG. 5B. Hence through the elastic force of the elastic element 122, the position of the adjusting bolt 120 may be adjusted and the first coupling section 124 of the anchor section 123 may be slid to the sliding trough 125 for adjusting the position of the two-piece shoe cap 14. When a desired dimension is secured, ~~release~~ the depressing section 19 is released as shown in FIG. 5C, the adjusting bolt 120 returns to the first position, and the first coupling section 124 and the second coupling section 124' of the anchor section 123 and the adjusting bolt 120 return to the engaging position to anchor the two-piece shoe cap 14.

Moreover, the anchor section 123 may be separately formed on the toe cap 140 or the heel cap 141. However, the adjusting bolt 120 has to mate with the truck 10 at a desired location. The relative locations of the adjusting bolt 120 and the anchor section 123 may be switched.